

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
21 June 2001 (21.06.2001)

PCT

(10) International Publication Number
WO 01/44113 A1

(51) International Patent Classification⁷: C01G 45/12,
45/00, C01D 15/00, H01M 10/00, 4/50, 4/58

(21) International Application Number: PCT/KR00/01470

(22) International Filing Date:
15 December 2000 (15.12.2000)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
1999/58066 15 December 1999 (15.12.1999) KR

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(81) Designated States (national): AU, CN, IN, JP, SG, US.

(84) Designated States (regional): European patent (AT, BE,
CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC,
NL, PT, SE, TR).

Published:

— With international search report.

For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

(54) Title: A METHOD FOR PREPARING LITHIUM MANGANESE SPINEL OXIDE HAVING IMPROVED ELECTROCHEMICAL PERFORMANCE

(57) Abstract: The present invention relates to a method for preparing a lithium manganese complex oxide $\text{Li}_{1+x}\text{Mn}_{2-x}\text{O}_4$ ($0 < x < 0.12$) used as a cathode active material of a lithium or lithium ion secondary battery. The present invention provides a method for preparing a manganese compound comprising the step of simultaneously applying a mechanical force and heat energy to a manganese compound to remove defects present in particles of the manganese compound and to control the aggregation of particles and the shape of the aggregated particles, a method for preparing a lithium manganese complex oxide with a spinel structure using the manganese compound prepared by the above method as a raw material, and a lithium or lithium ion secondary battery using the lithium manganese complex oxide with a spinel structure prepared by the above method as a cathode active material. A lithium or lithium ion secondary battery using the lithium manganese complex oxide with a spinel structure prepared from the manganese compound without defects inside particles as a cathode active material has excellent charge/discharge characteristics and cyclic performance.

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